

Since 1994.....

## Labland Group of Companies



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For Generations.....

**Labland  
Biodiesel**  
Private Limited



From Lab To Land

**Labland  
Biotech**  
Private Limited  
Plant Tissue Culture



**Dr. Sudheer Shetty**  
Chairman, Labland Group

**Dr. Sudheer Shetty** is the founder and Chief mentor of the Company.

Dr. Sudheer Shetty, with a Ph. D. (Applied Botany) from the University of Mysore, India, successfully floated the Mysore-based first Biotech Company- Labland Biotech Private Limited.

The 25 years of research and 15 years of business experience of Dr. Shetty in the field of commercial plant biotechnology have been instrumental to the successful vision, activities and realization of Labland's programmes.

### Company profile

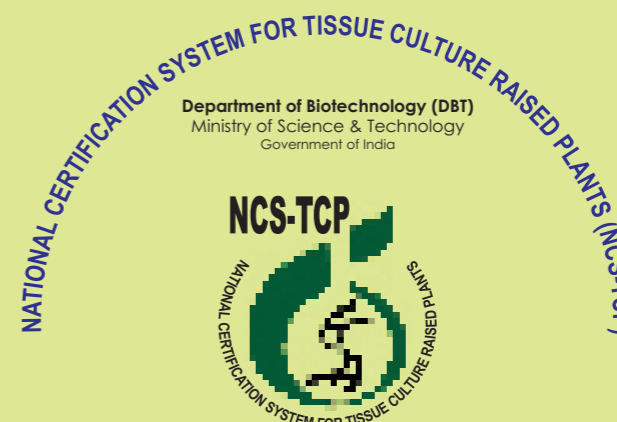
**Labland**, a Private Limited Company floated in the year 1994, is a global player in the field of plant biotechnology and plant science with a fully equipped plant tissue culture facility and sophisticated R & D laboratory in Mysore, South India.

**Labland Group** is promoted by technocrats from the field of plant science, engineering and allied subjects. The core group specializes in plant biotechnology, with research and commercial interest in Foliages, Horticultural Crops, Medicinal Plants, Ornamentals and Plantation Crops. Labland Biotech, the parent company, established in 1994, specializes in developing plant tissue culture protocol for a wide range of economically important plant varieties. The Company has combined the traditional skills of mass micropropagating the plants with modern scientific techniques.

**Labland Biodiesel**, a subsidiary, was established for diversified activities in the field of biodiesel zeroing in on *Jatropha curcas* as the most suitable plant source for biodiesel production. Labland is committed to finding solutions to the global needs of improved planting material of *Jatropha curcas* by adopting latest techniques of plant science and biotechnology. The Group has set up **International Jatropha Technology Center, Jatropha Seed Science and Technology Center** and a dedicated **Tissue culture production facility for Jatropha** to reinforce the knowledge base and the products.



NCS-TCP Recognized  
Tissue Culture Lab



Certificate of Recognition



MINISTRY OF SCIENCE & TECHNOLOGY

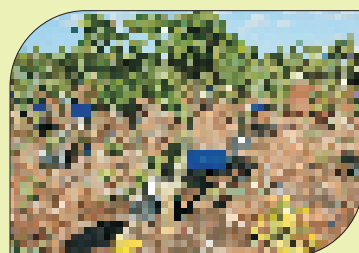
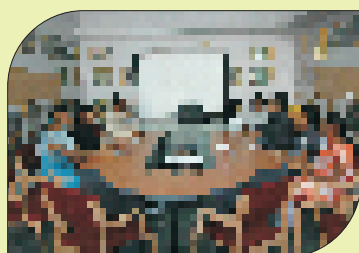
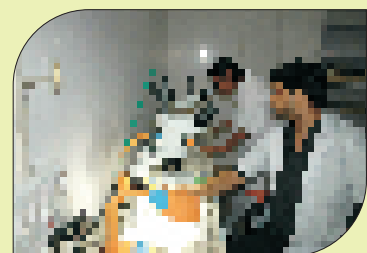
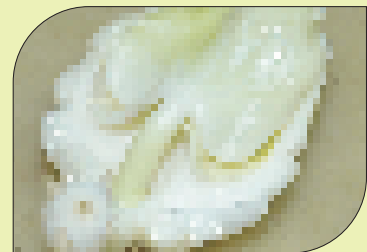
DSIR Recognized  
Research Lab

# Research and Development

Labland's core strength has been an ever-innovative approach, constantly integrating research with its commercial programmes. The strong team of scientists and technocrats backing Labland have been continuously working on developing solutions to a range of challenging issues of *Jatropha* plant science and plantation crops like banana, vanilla, cardamom and floricultural crops like anthurium, gerbera etc.

Research work has been carried out on different aspects of *Jatropha* plant that include varietal improvement, tissue culture-protocol development, improved cultivation practice for large scale plantation, pest and disease management, biodiesel production and value addition to by-products of *Jatropha curcas*.

Some of the research areas currently being investigated are: evolving high yielding clones of *Jatropha*, improving plant tissue culture process protocols, resolving the agronomical aspects, understanding the problems of large scale plantation and developing plantation management strategies. Other areas include formulating seed certification standards, production of hybrid seeds, pure line selections, development of male and female lines, developing good variety of seeds with higher oil content, standardizing effective oil extraction procedures and value addition to by-products. Labland has been recognized as a R & D center by the Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India. In addition, DBT has been supporting some of the ongoing research programmes of Labland.



# Current projects on Jatropha plantation

## Jatropha plantation in Gujarat, India

Labland has established Jatropha plantation in an area of about 310 acres in the state of Gujarat which is being extended further. This project is to gain valuable practical experience on identifying and tackling problems in large scale cultivation. Similar projects are now being initiated by Labland in the states of Karnataka, Maharashtra and Uttar Pradesh.



Plantation in Gujarat



Plantation at M. K. Halli, Mysore



Plantation at G. B. Sargur, Mysore



Plantation at Kateel, Mangalore

## Multilocational trials in Karnataka

Labland has Jatropha plantations in Coorg, Mangalore, Mysore, Puttur, Shimoga, and Bangalore. These plantations are maintained to study the response of Jatropha in different agroclimatic regions.

## Environmental awareness program

Labland has been maintaining about 6000 Jatropha plants for about 6 km stretch along the median on the main road leading to the world famous KRS Dam in Mysore. The purpose is to educate the general public about the dual advantages of growing Jatropha for Biodiesel and greening Mysore City.



Jatropha on road median in Mysore

# Board of Directors

**Dr. Sudheer Shetty**, Chairman, Labland Group of Companies.

**Dr. Geetaa Singh**, Ph. D., Applied Botany, aged 46 is the Managing Director of the Company. She began her career, as a Research Scientist, with a Bangalore-based premier plant biotech company of India. Dr. Geetaa has vast experience in the application of Biotechnology and an in-depth knowledge in the field- and lab-based production of many plant varieties. With this experience, she plays a key role in knowledge management & communication and is responsible for initiating and leading the R & D team for strategic research and implementation of the activities.



Dr. Geetaa Singh  
Managing Director

**Mr. Vijay B. Hegde**, aged 52 years, is a successful businessman from Mumbai with 30 years of experience in hotel management, real estate dealings and large scale land acquisitions. His rich experience in land identification and acquisitions augments the Company's activities and projects in establishing large Jatropha plantations all over India.



Vijay B. Hegde  
Director

**Ms. Sapna Shetty**, aged 40, is a Director on Board. She is a graduate in Social Sciences from Mangalore University and specializes in computer applications and business management. She has rich experience in administrative and corporate affairs. She is a founder member of Labland Group.



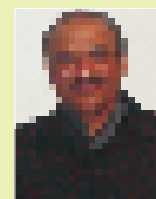
Ms. Sapna Shetty  
Director

**Mr. Rajagopal**, B. E., Mech. aged 48, is a Director on Board. Raj is the prime mover of the biodiesel activity of the Company. He brings rich work experience from renowned companies like Godrej, Larsen & Toubro and Kothari. Being a strategist, Raj coordinates business and market development activities.



Rajagopal  
Director

**Mr. Suren Hegde**, Executive Director, is a Physics post graduate from University of Cincinnati, Ohio, USA. He is the recipient of the Full Scholarship, University of Cincinnati. Suren worked as a Sales Engineer in Lunkenheimer Company during 1987-1989. As a Sales Director of Lunkenheimer Energo Valves between 1989 and 1994, he was instrumental in increasing the sales from US\$ 5M to US\$ 40M. He is the President of Cincinnati Valve Company since 1994 which he owns. He is also the Owner/ President of SIA Spa since 2006.



Mr. Suren Hegde  
Executive Director

**Prof. H. Shekar Shetty**, Ph. D. in Botany, aged 65 is a Director on Board. He has rich administrative experience as Chairman of a PG Department, Dean & Faculty of Science and Technology, Member of the Academic Council, and as Member of Senate, University of Mysore. He has more than 35 years of Teaching/Research and Administrative experience in the University. He has contributed significantly in understanding the biology and control of pathogens with reference to crop improvement programs. Prof. Shekar Shetty has guided many research students for their Ph. D. / M. Phil. programs and is a recipient of several national and international awards.



Prof. H. Shekar Shetty  
Director

# Scientific Advisory Board

**Dr. N. G. K. Karanth**, Ph. D. Microbiology (IISc., Bangalore), retired as Deputy Director and Head, Department of Food Protectants and Infestation Control, Central Food Technological Research Institute (CFTRI) after serving for 24 years. He has immensely contributed to the field of food protection and pesticide degradation and has 6 international patents with more than 100 scientific publications. Dr. Karanth has supervised many students leading to Ph. D., M. Phil., M.S., M.E., and M. Tech. degree. He has travelled world-wide and is a recipient of many honours and awards.



Dr. N.G.K. Karanth

**Dr. N. G. Karanth**, B. E. Chem. Engineering, Ph. D. (Chem. Engg. Stanford, U. K.), retired as Additional Director, CFTRI after serving for 22 years in CFTRI. He was heading fermentation technology division and has incredible contributions in the development of biosensors for pesticides and production of lactic acid bacteria as feed supplements. He has more than 30 patents and over 120 publications to his credit with several honours and awards.



Dr. N. G. Karanth

**Prof. S. Shankara Bhat**, Ph. D., Botany, served as a faculty for 30 years in the P.G. Department of Botany, University of Mysore and was instrumental in creating the Department of Microbiology in the University of Mysore. He has about 75 research papers and has immensely contributed to the field of plant pathology, agronomy and microbiology. He is the founder of Plant Clinic in the University of Mysore.



Prof. Shankara Bhat

**Dr. S. B. Mathur**, Ph. D., Botany, is an international Seed Scientist and has served Danish Government Institute of Seed Pathology for Developing Countries, Denmark for 36 years. He is instrumental in creating awareness on the importance of seed health, the relationship between seed health and food production/food security, and the impact of good quality seed on increasing agricultural yield. He has immensely contributed to the field of seed-borne diseases, their identification and prevention of outbreaks of diseases at an early stage, in formal and informal seed sectors. He has travelled in more than 70 countries on different missions. He has more than 100 publications to his credit with several honours and awards.



Dr. S. B. Mathur

Each with rich academic contributions in the respective fields of expertise is the driving force behind the different commercial, R & D activities of Labland.

# Facilities

## Tissue culture

A highly advanced tissue culture facility is installed for micropropagation of Horticultural and Plantation crops, Foliages and Ornamentals with a production capacity of 5 million plants per year.

Labland has established an exclusive plant tissue culture lab for micropropagation of *Jatropha* with the support of Department of Biotechnology, Ministry of Science and Technology, Government of India.

## Biodiesel refinery

Labland has set up an oil expeller with a seed crushing capacity of 1 tonne seeds per day and a refinery with 50 L / per day biodiesel production capacity. The stock of *Jatropha* seeds to run the expeller is procured from local market and its own plantations.

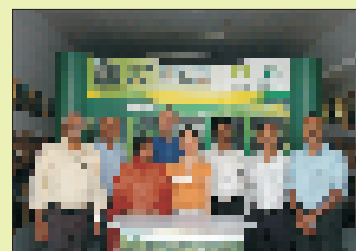
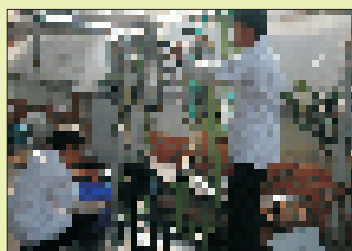
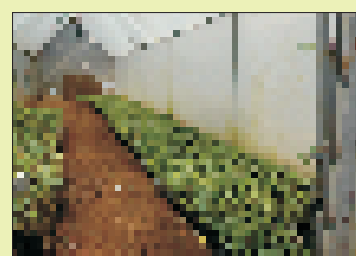
## Germplasm bank

The Company has *Jatropha curcas* accessions collected from different agro-climatic zones within and outside the country, maintained in its experimental farm. Labland has developed elite selections using these accessions, since 2002. These elite selections are being used for developing pure lines and hybrids.

Establishment of a *Jatropha curcas* germplasm bank under in vitro conditions is also in progress.

## Other facilities and centers

- Hi-tech greenhouses which can harden 800,000 plantlets at a time, along with walk-in hardening tunnels
- Secondary hardening shade net house facility of about 20,000 sft
- Polyhouse facility for growing *Jatropha* seedlings in about 15,000 sft
- International *Jatropha* Technology Centre
- *Jatropha* Information Dissemination Centres
- *Jatropha* Dedicated Tissue Culture Facility
- *Jatropha* Display and Training Centre



# Accreditation

Research and Development (R & D) unit of Labland is recognized by the DSIR, Ministry of Science and Technology, Government of India.

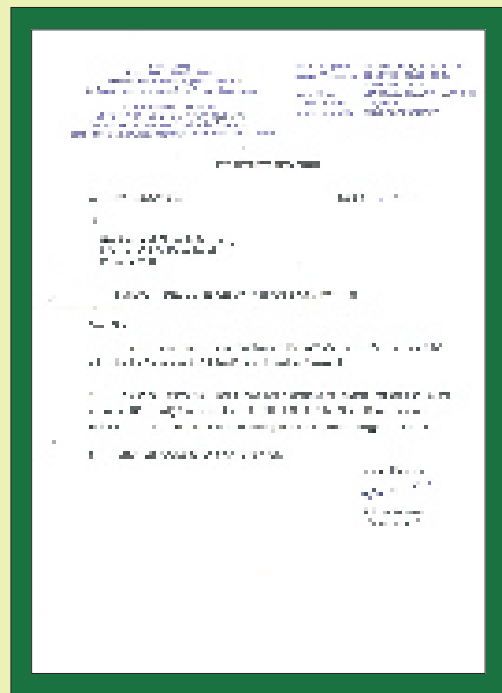
The plant tissue culture production facility has been accredited by the National Accreditation Agency, Department of Biotechnology of the Ministry of Science and Technology, Government of India.

Labland is a member on the Board of Studies of Applied Botany, Kuvempu University, Department of Botany and the Department of Biotechnology, J.S.S. Autonomous College, Mysore.

Labland was awarded with Mysore District Rajyotsava Award in the year 2008 for achievements in Biotechnology by the Mysore District Administration and Kannada & Culture Department.



NCS-TCP  
DBT Ministry of Science & Technology  
Certified Tissue Culture Lab



Govt. of India  
Ministry of Science & Technology  
Certified R&D Lab

## Collaborations

Labland has a few research collaborations aimed at resolving the regional/global challenges concerned with *Jatropha* plant and plantation science.

### The National Institute of Engineering (NIE), Mysore

Labland has entered into research collaboration with one of the premier engineering institutions of the state, the NIE, Mysore, Karnataka state, for carrying out research and developmental activities in biodiesel and by-products of *Jatropha curcas*.



### St. Philomena's College, Puttur, Mangalore University

This college is one of the JIDCs of Labland. Besides promoting the local cultivation of *Jatropha*, the college is active in conducting seminars and workshops in *Jatropha* related activities, on behalf of Labland.

### Sahyadri Science College, Shimoga, Kuvempu University

Labland has funded a collaborative research project with the Sahyadri Science College to carry out research on regional germplasm collection and seed technology of *Jatropha*. Besides, this educational institute is a *Jatropha* Information Dissemination Centre (JIDC) of Labland for educating the local *Jatropha* growers in the related activities.

# Products

## Tissue culture products are available as

- Starter multiplying cultures of listed plant species
- Ex-agar plants
- In-agar plants
- Hardened net pot plants
- Polybag plants
- Pot plants

## Plant varieties available

- Horticultural
  - Banana: Robusta, Grand 9
  - Cardamom: Nellani Gold
  - Vanilla planifolia*
- Floricultural
  - Anthuriums
- Foliages
  - Cordylines
  - Spathiphyllums
  - Syngoniums
  - Yuccas
- Plantation crops
  - Jatropha curcas*

**Speciality:** Labland undertakes custom production of any plant species with mutual agreements

# Services offered

## Research services

- Carry out contract research in *Jatropha curcas* and other crops for region-specific requirements
- Develop tissue culture production-protocol for any crop and supply the starter multi cultures
- Provide training in plant biotechnology, microbiology, seed technology, molecular biology, tissue culture, *Jatropha* cultivation/plantation management/greenhouse hardening and nursery management for any crops

## Commercial services

- Supply high quality tissue culture plants of *Jatropha* and other varieties of ornamentals, foliages, medicinal plants and forest tree crops
- Supply high quality certified seeds of *Jatropha* for planting purpose
- Custom production of ornamentals and foliages through tissue culture
- Contract cultivation of *Jatropha curcas* with assured buy-back agreement
- Collaborate as a technology partner for establishing high quality *Jatropha curcas* plantations

## Technical consultancy

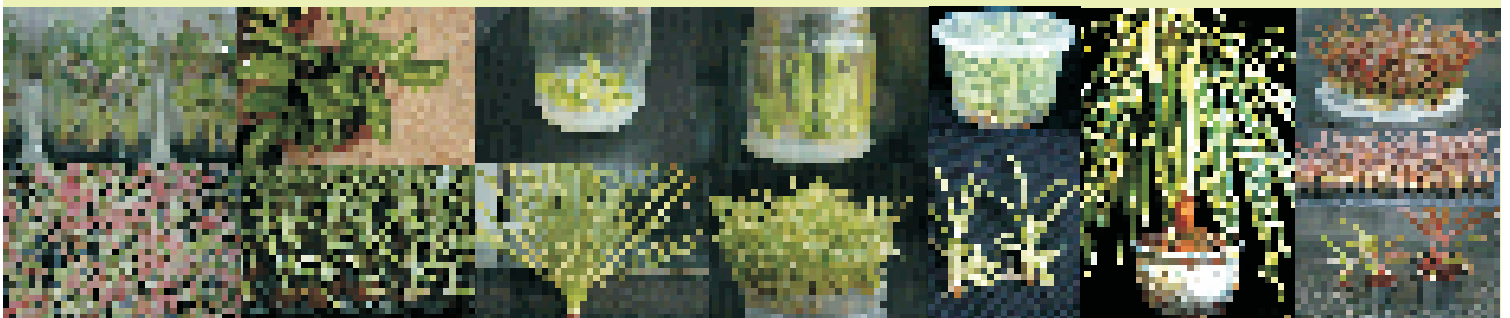
- Consultancy to establish successful plantations of Banana, Anthuriums, Gerbera, Orchids and *Jatropha curcas*
- Consultancy to establish region-specific R & D facility for *Jatropha curcas* and other crops
- Consultancy to establish tissue culture facility and train required manpower

# Foliages

The exotic foliage business is the fastest growing plant nursery industry. The evolution of newer varieties has created sensational excitement to producers, sellers and buyers. Production of large numbers of such newer varieties is possible only through tissue culture techniques. Labland has been multiplying large numbers of exotic foliage varieties like Syngoniums, Spathiphyllums, Phyllodendrons, Cordylines, Yuccas etc through tissue culture since the inception of the Company. Labland has developed through somaclonal variation, a new Spathiphyllum variety named Spathiphyllum 'SONA'.

## Delivery of plantlets

- **Ex-agar:** supplied to those who have the hardening facility and who can take care of plantlets for about 3-4 months in the primary and the secondary nursery. Plantlets are packed and supplied in small, closed, ice-gel layered 5-ply cartons.
- **In-agar:** supplied in food-grade polypropylene boxes for export purpose.
- **Net pot:** supplied in different sizes ranging between 6 cm and 20 cm depending on customer's choice. Plantlets are packed in cartons.



# Anthuriums

The exotic anthuriums are part of hi-tech horticultural activity. The scarcity of quality plantlets of anthuriums is fulfilled by large-scale propagation through tissue culture. Labland has ventured into multiplying exotic varieties of anthuriums in large numbers through tissue culture since the inception of the Company.

## Delivery of plantlets

- **Ex-agar:** supplied to those who have the hardening facility and who can take care of plantlets for about 3-4 months in the primary and the secondary nursery. Plantlets are packed and supplied in small, closed, ice-gel layered 5-ply cartons.
- **Net pot:** are supplied in different sizes ranging between 6 cm and 20 cm depending on customer's choice. Plantlets are packed in cartons.

## Varieties available

- 15 varieties of different colours of red, orange, pink, peach, white, green and bicolours are available. Besides, custom multiplication of any specific variety exclusively on contract basis is also undertaken.

## Special service offered

- Growers are provided with cultural practices to ensure sustainable and early yields from every plant.
- After-sale-service, field visits by the trained field officers, disease symptom analysis and disease management advice are also provided.



# Banana

High yielding banana plantlets are produced through tissue culture from high yielding, elite mother plants. The expert teams of field officers carefully choose the quality suckers for tissue culture production of banana plants. Banana plants produced through tissue culture are very popular because of the

- availability of different varieties throughout the year
- availability of large quantities of plants at any given time, irrespective of season
- availability of disease-free plants
- uniformity in growth, maturity and yield
- high yielding with proper agronomic practice

## Delivery of plantlets

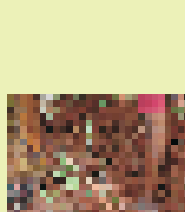
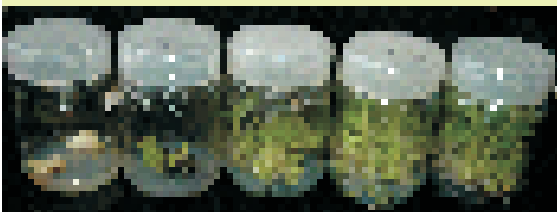
- **Ex-agar:** supplied to those who have the hardening facility and who can take care of plantlets for about 3-4 months in the primary and the secondary nursery. Plantlets are packed in small, closed cardboard boxes.
- **Net pot:** supplied to those who can grow them in the secondary nursery for about 1-2 months and subsequently transplant to field. Plants are packed in cartons.
- **Polybag plants:** ready-to-plant and are supplied after complete hardening in the secondary nursery.

## Varieties available

- Robusta and Grand-9  
Custom multiplication of any variety exclusively on contract basis is also taken up.

## Special service offered

- Farmers are provided with cultural practices to ensure attractive yields from every plant
- After-sale-service through field visits by trained field officers, disease symptom analysis and disease management advice are also provided.



## *Jatropha curcas* Tissue Culture

Large quantities of superior planting material are required for establishing successful large scale plantations of *Jatropha curcas*. Application of plant tissue culture is a promising and practical solution to meet the huge demand for planting material. Micropropagation of elite selections of *Jatropha* does mitigate the required demand to a great extent.

Labland has developed several elite selections from its own germplasm bank that are maintained since 2003, with their passport data. Tissues from newly grown elite selections are used to micropropagate through the application of tissue culture techniques.

A dedicated tissue culture facility has been installed to produce *Jatropha* plantlets in large volumes.



## Student Projects & Training

With a large number of commercial biotechnology sectors mushrooming all over India, ample career opportunities are available for young graduates. The Biotechnology industries always look for young graduates/post graduates with hands-on experience and in-depth knowledge in the field in order to secure excellent human resource.

Labland has been offering training to fresh science undergraduates/graduates/post-graduates willing to pursue their career in Biotechnology. The training course provides competence in advanced techniques in Molecular biology, Microbiology, Biochemistry, Seed technology, Plant tissue culture, Hi-tech horticulture/Floriculture and in establishing Jatropha plantations.

Labland has the state-of-the-art facilities and faculty to offer the training in all aspects of plant biotechnology.

Labland permits, endorses and accepts fresh post graduates for industrial training under Biotech Industrial Training Program (BITP) sponsored by the DBT, Ministry of Science and Technology, Government of India as per BCIL stipulations.

